GE ELECTRONICS

7247

DOUBLE TRIODE

DESCRIPTION AND RATING

The 7247 is a dissimilar double-triode designed for use in high-fidelity audio amplifiers. Section 1, which is similar to one section of a 7025, is intended for application in low-level, high-gain stages where low hum and microphonism are desired. Section 2, which is similar to one section of a 12AU7, is intended for cathode follower or phase-inverter service.

GENERAL

ELECTRICAL

	Series	Parallel	
Cathode—Coated Unipotential			
Heater Voltage, AC or DC*	12.6±1.3	6.3±0.6	Volts
Heater Current†	0.15	0.3	Amperes
Direct Interelectrode Capacitances‡	**Section 1§**	**Section 2¶**	
Grid to Plate: (g to p)	1.7	1.4	pf
Input: g to (h+k)	1.6	9.8	pf
Output: p to (h+k)	0.37	0.33	pf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

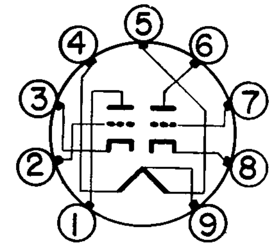
	Section 1§	Section 2¶	
Plate Voltage	330	330	Volts
Positive DC Grid Voltage	0	0	Volts
Negative DC Grid Voltage	−55	−55	Volts
Plate Dissipation	1.2	3.0	Watts
DC Cathode Current	...	22	Milliamperes
Heater-Cathode Voltage			
Heater Positive with Respect to Cathode			
DC Component	100	100	Volts
Total DC and Peak	200	200	Volts
Heater Negative with Respect to Cathode			
Total DC and Peak	200	200	Volts
Grid-Circuit Resistance			
With Fixed Bias	15	0.5	Megohms
With Cathode Bias	...	1.0	C

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in the characteristics of all other electron devices in the equipment.

BASING DIAGRAM

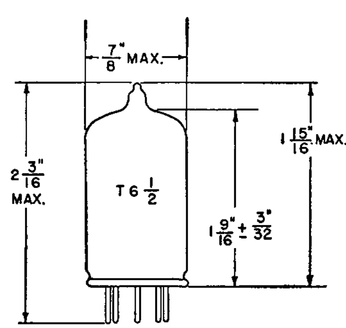


EIA 9A

TERMINAL CONNECTIONS

Pin 1—Plate (Section 2)
Pin 2—Grid (Section 2)
Pin 3—Cathode (Section 2)
Pin 4—Heater
Pin 5—Heater
Pin 6—Plate (Section 1)
Pin 7—Grid (Section 1)
Pin 8—Cathode (Section 1)
Pin 9—Heater Center-Tap

PHYSICAL DIMENSIONS



EIA 6–2

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A₁ AMPLIFIER

	Section 1§		Section 2¶		
Plate Voltage	100	250	100	250	Volts
Grid Voltage	−1.0	−2.0	0	−8.5	Volts
Amplification Factor	100	100	20	17	
Plate Resistance, approximate	80,000	62,500	6500	7700	Ohms
Transconductance	1250	1600	3100	2200	Micromhos
Plate Current	0.5	1.2	11.8	10.5	Milliamperes
Grid Voltage, approximate Ib = 10 Microamperes				−24	Volts
Equivalent Noise and Hum Voltage, Section 1, average, true RMS△				1.8	Microvolts
Equivalent Noise and Hum Voltage, Section 1, maximum, true RMS¢				7.0	Microvolts

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

† Heater current at bogey heater voltage.

‡ Without external shield.

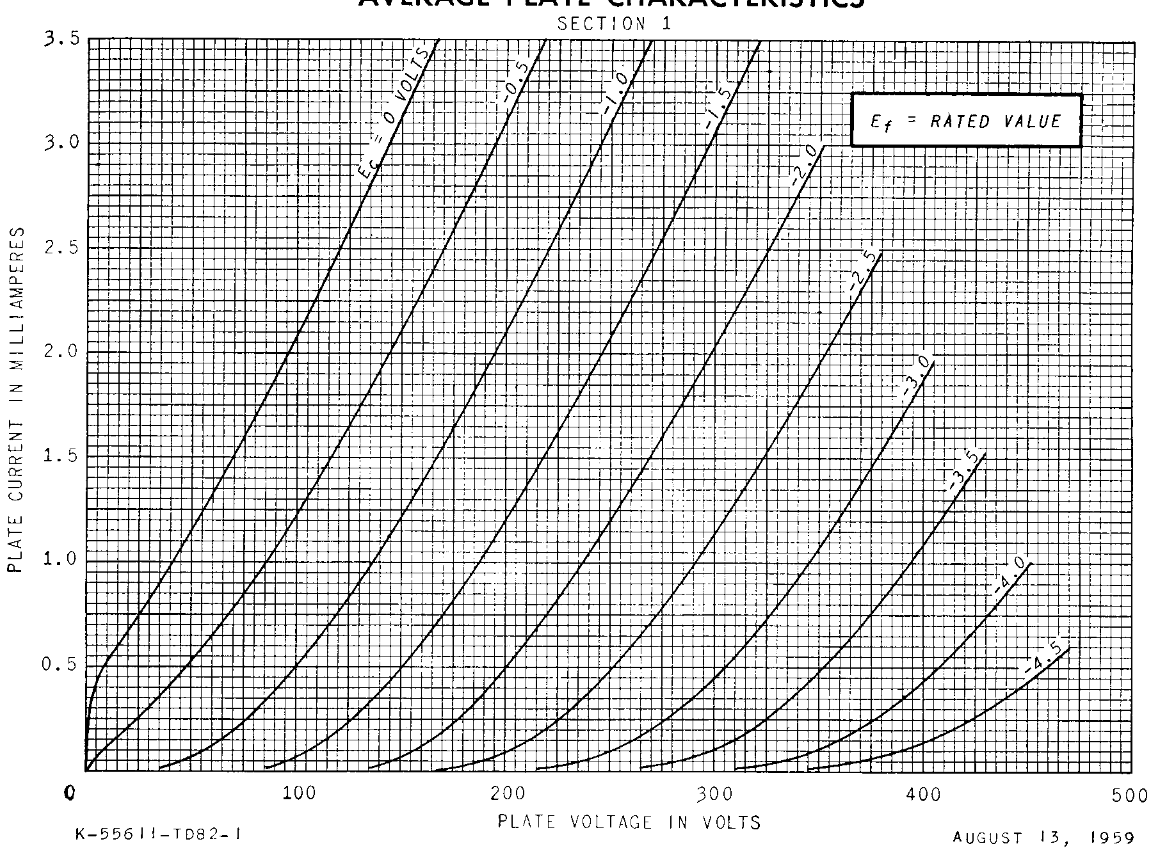
§ Section 1 connects to Pins 6, 7, and 8.

¶ Section 2 connects to Pins 1, 2, and 3.

△ Referred to grid and measured under the following conditions:
Ef = 6.3 volts AC (parallel connection), CT of heater transformer grounded; Ebb = 250 volts; Rb = 100,000 ohms; Rk = 2700 ohms, bypassed with 100 µf; Rg = 0 ohms; Amplifier frequency range = 25 to 10,000 cps.

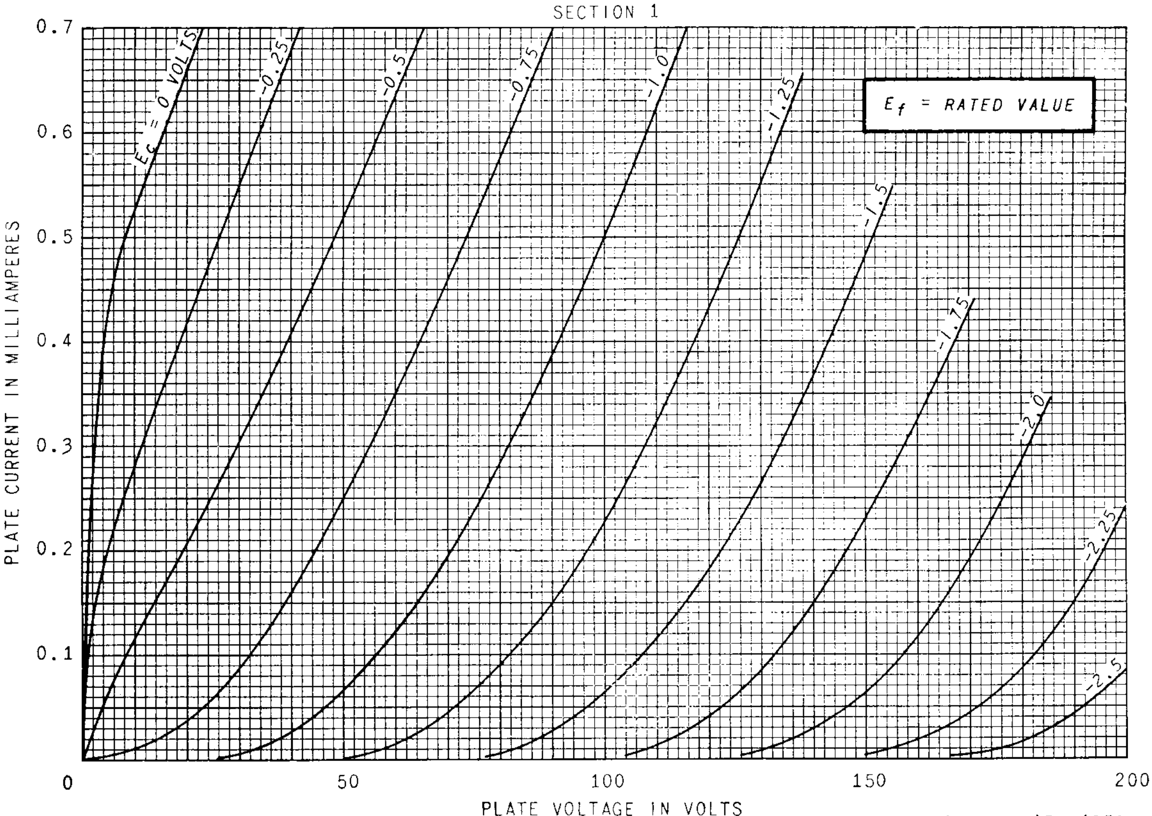
¢ Referred to grid and measured under the following conditions:
Ef = 6.3 volts AC (parallel connection), CT of heater transformer grounded; Ebb = 250 volts; Rb = 100,000 ohms; Rk = 2700 ohms, unbypassed; Rg = 50,000 ohms; Amplifier frequency range = 25 to 10,000 cps.

AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

SECTION 1

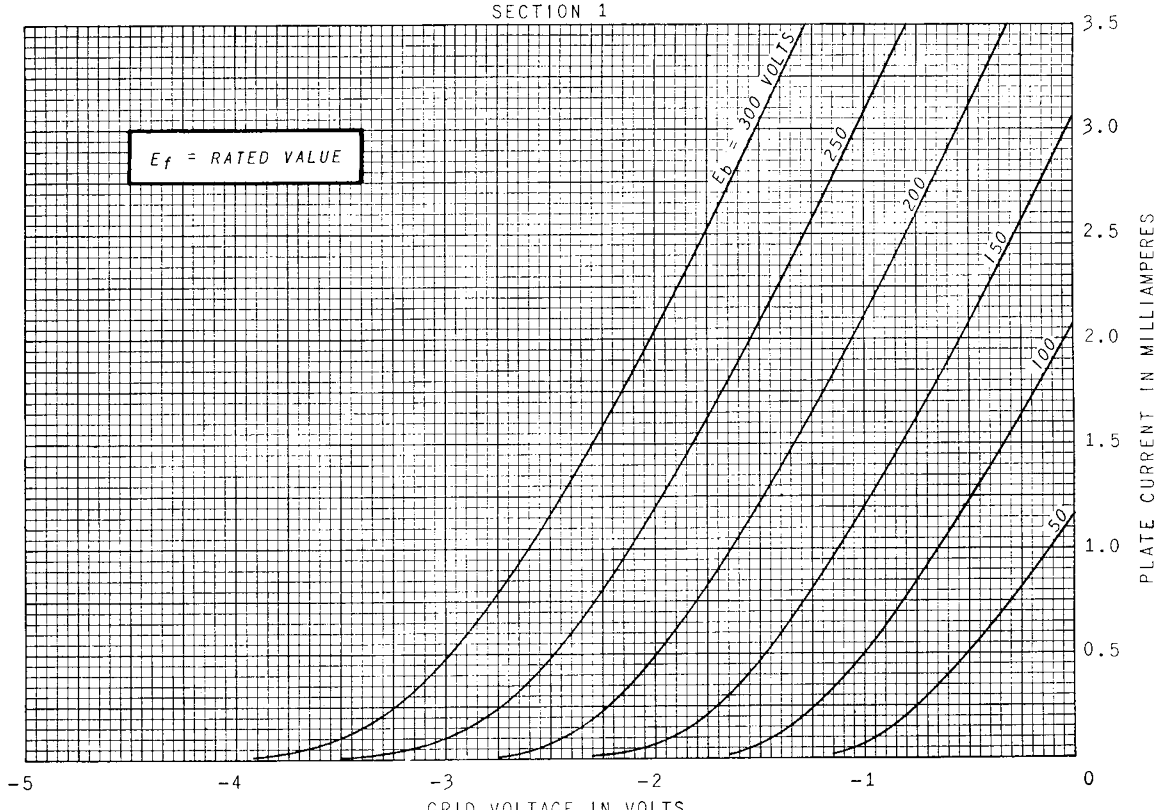


K-55611-TD82-2

AUGUST 13, 1959

AVERAGE TRANSFER CHARACTERISTICS

SECTION 1

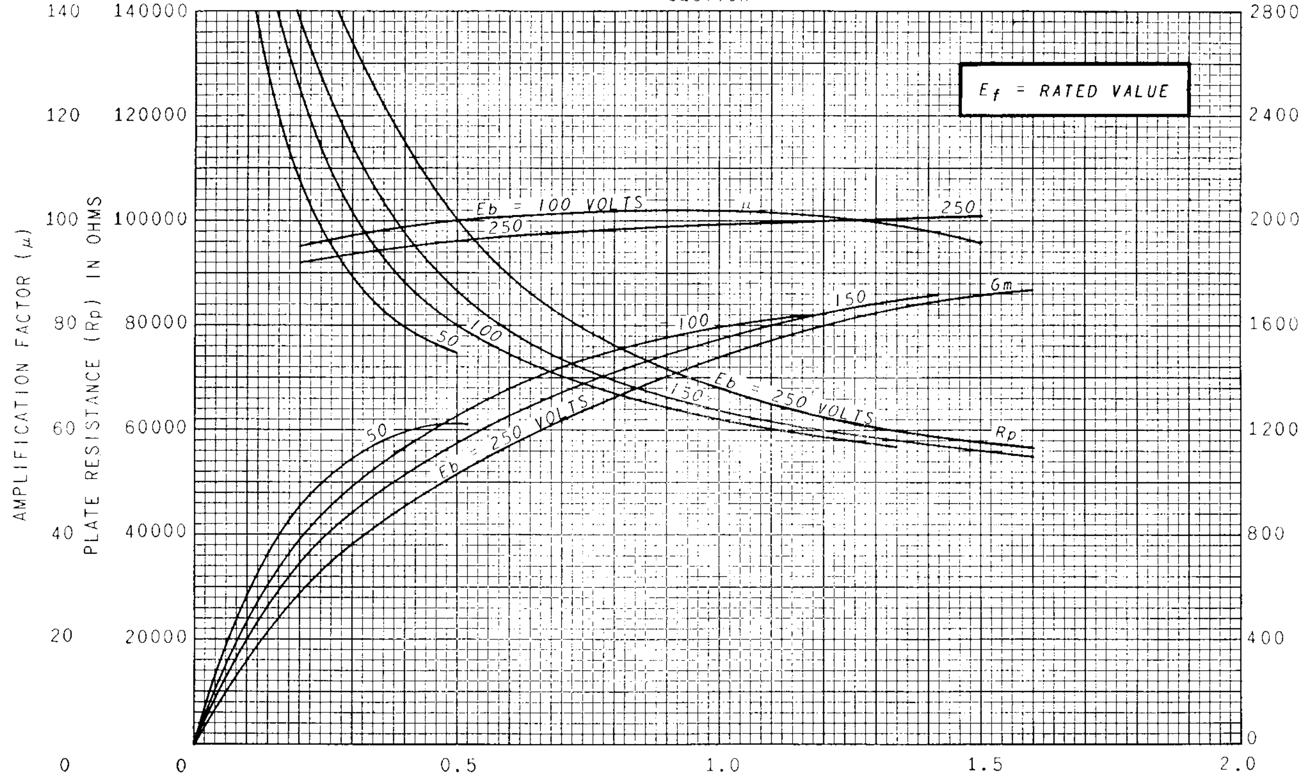


K-55611-TD82-3

AUGUST 13, 1959

AVERAGE CHARACTERISTICS

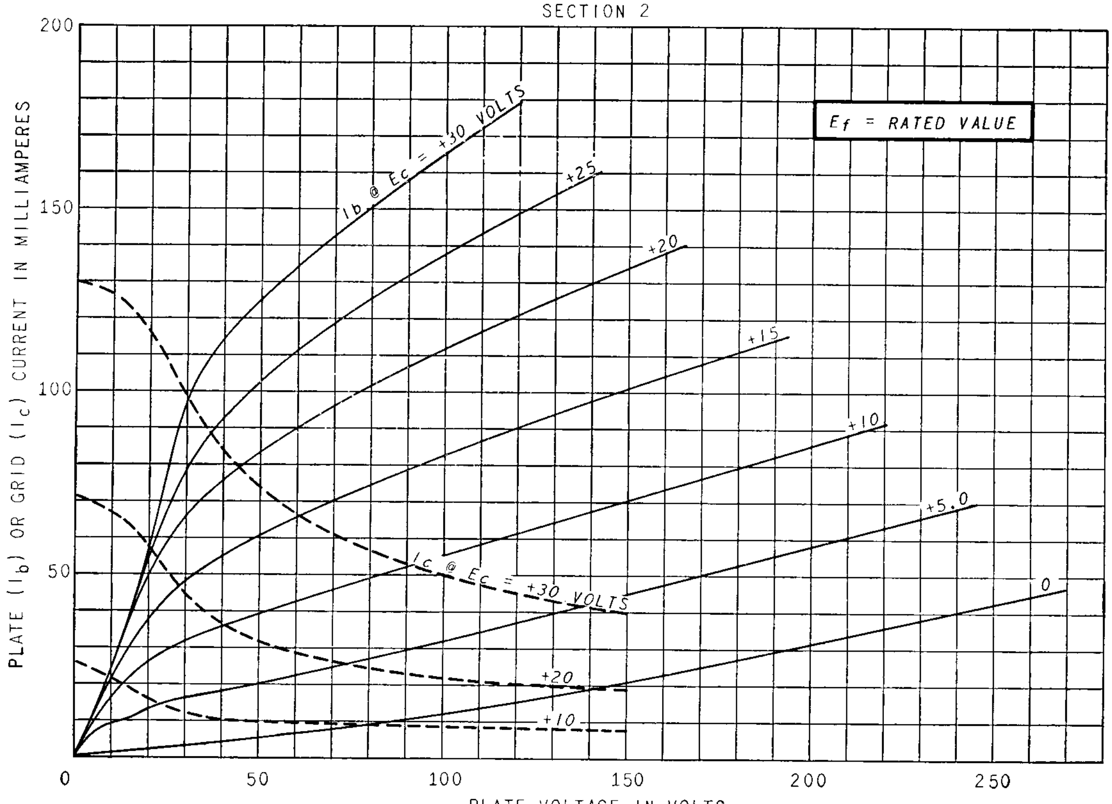
SECTION 1



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AVERAGE PLATE CHARACTERISTICS

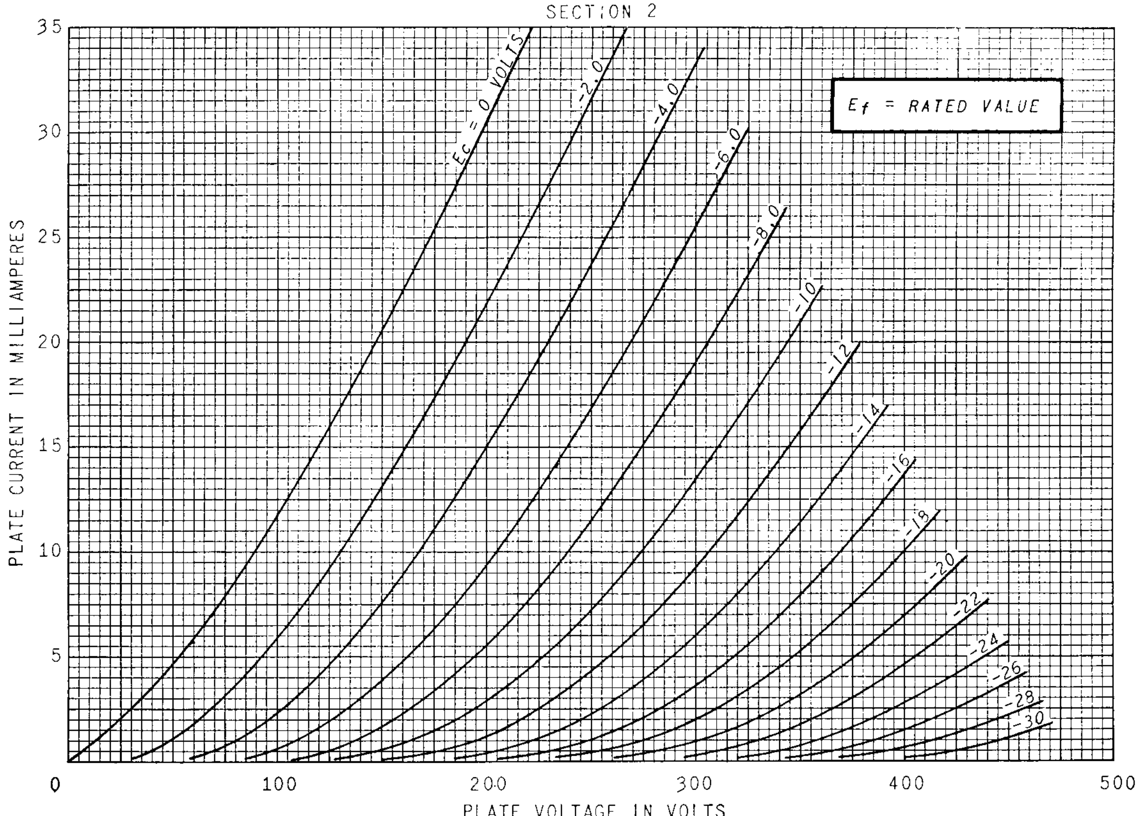
SECTION 2



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AVERAGE PLATE CHARACTERISTICS

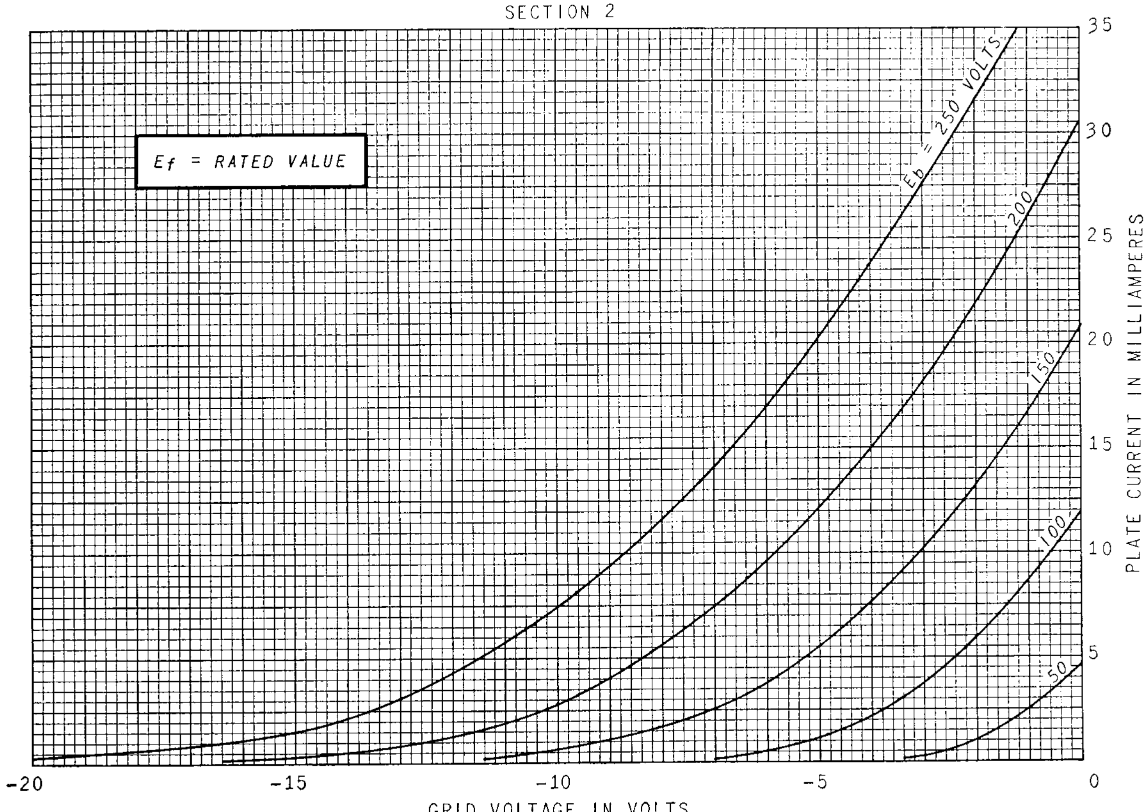
SECTION 2



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AVERAGE TRANSFER CHARACTERISTICS

SECTION 2



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AVERAGE CHARACTERISTICS

